

CLAIMS

WHAT IS CLAIMED IS:

1. A rotary atomizer for a coating material applicator, said atomizer comprising:
 - a rotating element having a longitudinal opening therethrough;
 - a bell cup connected to said rotating element for rotation therewith, said bell cup having inner and outer edges, an outer surface and an inner surface receiving coating material to be atomized, said inner surface being open to said longitudinal opening in said rotating element;
 - a cleaning fluid conduit in flow communication with said longitudinal opening in said rotating element; and
 - a flow enhancing formation defined in said longitudinal opening to improve transport of cleaning fluid along said longitudinal opening.
2. The rotary atomizer of claim 1, said flow enhancing formation being a groove in a surface defining said longitudinal opening.
3. The rotary atomizer of claim 2, said groove being helical.
4. The rotary atomizer of claim 1, including an orifice behind said bell cup directed at said outer surface, and a cleaning fluid conduit in flow communication with said orifice.
5. The rotary atomizer of claim 4, said flow enhancing formation being a groove in a surface defining said longitudinal opening.

6. The rotary atomizer of claim 4, said flow enhancing formation being a helical groove in a surface defining said longitudinal opening.

7. The rotary atomizer of claim 4, said orifice directed at an area nearer to said inner edge than to said outer edge of said bell cup.

8. The rotary atomizer of claim 4, said orifice configured to direct a fan-shaped spray at said outer surface.

9. The rotary atomizer of claim 8, said orifice directed at an area nearer to said inner edge than to said outer edge of said bell cup.

10. The rotary atomizer of claim 9, said flow enhancing formation being a groove in a surface defining said longitudinal opening.

11. The rotary atomizer of claim 10, said groove being helical..

12. A cleaning system for a rotary atomizer having a bell cup on a rotating element and an axial opening from the rotating element into the bell cup, said cleaning system comprising:

a cleaning fluid conduit in flow communication with the opening;

a flow enhancing formation defined in the opening to improve transport of cleaning fluid along the opening from said cleaning fluid conduit to the bell cup as the rotating element rotates;

an orifice behind the bell cup directed at an outer surface of the bell cup; and

a cleaning fluid conduit in flow communication with said orifice.

13. The cleaning system of claim 12, said flow enhancing formation being a groove.

14. The cleaning system of claim 13, said groove being helical.

15. The cleaning system of claim 12, said orifice configured to direct a fan-shaped spray at the outer surface of the bell cup.

16. The cleaning system of claim 15, said orifice configured to direct said fan-shaped spray in an area nearer to an inner edge of the bell cup than to an outer edge of the bell cup.

17. A method for cleaning a rotary atomizing applicator having a bell cup connected to a rotating element, said method comprising steps of:

providing a longitudinal opening from the rotating element into the bell cup, and a formation on the surface of the opening to transport cleaning fluid therealong;

rotating the rotary atomizing head;

dispensing cleaning fluid into the longitudinal opening;

transporting the cleaning fluid into the bell cup using the formation; and

spraying cleaning fluid against an outer surface of the bell cup.

18. The method of claim 17, including spraying the cleaning fluid against the outer surface in a fan-shaped spray.

19. The method of claim 18, including spraying the cleaning fluid against the outer surface in an area nearer to an inner edge of the bell cup than to an outer edge of the bell cup.

20. The method of claim 17, including spraying the cleaning fluid against the outer surface in an area nearer to an inner edge of the bell cup than to an outer edge of the bell cup..